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LETTERS TO THE EDITOR

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Low back pain: doesn't work matter at all?

Dear Sir,

Kwon *et al.* [1] concluded that occupational physical activities, such as lifting and bending and twisting of the trunk, are not suspected of causing low back pain (LBP). This striking conclusion is based on a review of their own eight reviews. In a time, where reviews are considered as providing the highest level of medical evidence, let alone a review of reviews, this conclusion has far-reaching consequences for the prevention and treatment of work-related LBP. Should the UK Occupational Health Guidelines for the Management of Low Back Pain be changed? These guidelines state that 'physical demands at work are one factor influencing LBP but are often not the most important': <http://www.facocmed.ac.uk/library/docs/backsl.pdf>. Unfortunately, former criticism by Takala [2] and Kuijer *et al.* [3] has not been taken into account in this review of reviews nor is reference made to their arguments. Therefore, we feel the urge to respond again.

Firstly, the reviews summarized in the present review of reviews apply the Bradford-Hill criteria to single studies. It should be noted that these 'criteria', or aspects as referred to by Bradford-Hill [4], were not intended for evaluation of a single study but to be used to assess the level of evidence for causality of factor A with disease B across all available scientific evidence from different studies. Inferences on causality require the synthesis of observational data with experimental data and it is by nature of these criteria impossible for one observational study to fulfil all criteria.

Secondly, the findings in the reviews are not consistent with those of other systematic reviews. While one review [5], that elucidated substantial debate [6,7], found conflicting evidence, other reviews found evidence in favour of a relationship between occupational risk factors, such as manual lifting, and bending and twisting of the trunk and LBP [8–11].

Thirdly, instead of a dichotomous decision whether or not for instance lifting is a risk factor for LBP, it might have been better to quantify the attributable fraction of each risk factor at stake. Lötters *et al.* [10] calculated the attributable fraction for LBP due to the risk factors manual lifting, bending and twisting of the trunk and whole-body vibration based on a meta-analysis.

Fourthly, checklists and rating scales are commonly used to evaluate the quality of original reports and the level of evidence in systematic reviews. These tools should be critically applied, keeping in mind that the scales and cut-off limits for decisions are arbitrary, and that there is

no theoretical ground to generalize them as gold standards. Causality or lack thereof cannot be based on or concluded by scales. Neither does lack of statistical association exclude causality.

Finally, this review of reviews might have been more elucidative when a thorough meta-analysis on the data from the original studies had been performed. As Balagué *et al.* [12] recently stated about LBP: 'this elusive condition that is affected by a host of genetic, physical, psychological, environmental, cultural and societal factors'.

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